

**GATE-ENHANCED JUNCTION VARACTOR  
WITH GRADUAL CAPACITANCE VARIATION**

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**ABSTRACT**

A semiconductor junction varactor utilizes gate enhancement for enabling the varactor to achieve a high ratio of maximum capacitance to minimum capacitance. The varactor has a gate region (131 or 181) divided into multiple portions of differing zero-point threshold voltages for enabling the varactor capacitance to vary relatively gradually with a control voltage applied to the varactor.